

Application No. 10/687,766

**REMARKS**

Applicant gratefully acknowledges the withdrawal of the rejections based on references other than U.S. Patent No. 4,563,515 to Schipfer et al. ("Schipfer").

Applicant has carefully considered the rejection in the previous office action and submits the following response. New claims 20-36 have been added. The new claims add no new matter, and are believed to place the application in condition for allowance.

**Rejection Under 35 U.S.C. §112**

The examiner rejected claim 19 as indefinite under 35 U.S.C. § 112, second paragraph. The foregoing amendment to claim 19 is believed to overcome the rejection.

**Rejection Under 35 U.S.C. §102**

The examiner maintained the rejection of previous claims 1-7, as well as claims 13-18 as anticipated under 35 U.S.C. § 102(b) by Schipfer. The examiner contends that col. 3, ll. 66-col. 4, l. 5-8 of Schipfer

disclose the use of amine modifier, namely, N,N-dimethylpropanediamine-1,3 which is identical to amine modifier utilized in the present invention and is noted, corresponds to presently claimed formula III when  $y=z=0$  and Y is anchoring moiety, i.e., tertiary amine comprising five carbon atoms, identical to the anchoring moiety of the present invention. In light of this disclosure, it is not clear why applicants' argue that there is no disclosure of amine modifier in Schipfer.

Final action, page 4. The examiner requested clarification. *Id*

**-Response**

The examiner has the burden to establish a *prima facie* case of unpatentability of the pending claims on any grounds, including anticipation and obviousness. *In re Oetiker*, 24 U.S.P.Q.2d 1443 (Fed. Cir. 1992). If examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more, the applicant is entitled to grant of the patent. *In re Oetiker*, 24 U.S.P.Q.2d 1443; MPEP 2142. In order to establish a case of *prima facie* anticipation, the examiner must establish that a prior art reference discloses every limitation of

Application No. 10/687,766

The examiner has not met this burden with respect to the pending claims. Applicant respectfully requests that the claims be allowed.

**-Claims 1-7 and 36**

Claim 1 has been amended to specify that, in the structure of formula III:



Y represents an anchoring moiety selected from the group consisting of aliphatic groups having from 2 to 10 carbon atoms containing one or more tertiary amino group and heterocyclic groups containing one or more basic ring nitrogen atom, the heterocyclic group being attached to the  $NH_{3-x-y-z}$  group by an alkylene group containing up to 10 carbon atoms.

Claim 36 is directed to a polyamine derivative made using the amine modifier, which also includes the foregoing limitation.

The examiner has not pointed to a teaching or suggestion of an amine modifier having the foregoing structure in Schipfer, or elsewhere, or to a polyamine derivative made using an amine modifier having the foregoing structure.

For the foregoing reasons, the examiner has not pointed to a teaching or suggestion of every limitation of claims 1-7 or 36 in Schipfer, and has not established a case of *prima facie* anticipation of claim 1, claims depending therefrom, or claim 36 in Schipfer.

Applicant respectfully requests that claims 1-7 and 36 be allowed.

**-Claims 20-35**

New claim 20 specifies:

- (b) reacting the polyamine-derived compound with one or more amine-specific reagents to form an intermediate, the amine-specific reagents having a fourth number of two or more amine-specific functional groups selected from the group consisting of isocyanate groups, anhydride groups, acid chloride groups, maleate groups, fumarate groups, citraconic ester groups, itaconic ester groups, and (meth)acrylate groups.

Application No. 10/687,766

**citraconic ester groups, itaconic ester groups, and (meth)acrylate groups.**

Emphasis added. New claim 28 includes the following limitation: "(b) reacting the polyamine-derived compound with **one or more polyisocyanate to form an intermediate comprising two or more isocyanate functionalities.**" (Emphasis added).

The examiner has not pointed to a teaching of the foregoing limitations in Schipfer, and has not established a case of *prima facie* obviousness of pending method claims 20-35 over Schipfer.

**-Claims 9-10 and 13-18**

In the previous office action mailed March 24, 2006, the examiner admitted that "there is no specific formula given for the polyamine derivative, given that Schipfer et al. disclose process as presently claimed, it is clear that the polyamine derivative would inherently possess structure as set forth in presently claimed formula II." Office Action mailed March 24, 2006, p 7.

Claim 9 has been amended to specify that:

**L is a residue of an at least bifunctional amine-specific reagent having two or more amine-specific functional groups selected from the group consisting of isocyanate groups, anhydride groups, acid chloride groups, maleate groups, fumarate groups, citraconic ester groups, itaconic ester groups, and (meth)acrylate groups.**

The examiner has not pointed to a teaching or suggestion in Schipfer of a process that would produce a polyamine derivative meeting the foregoing limitation.

Claim 36 includes the following limitation:

**Y represents an anchoring moiety selected from the group consisting of aliphatic groups having from 2 to 10 carbon atoms containing one or more tertiary amino group and heterocyclic groups containing one or more basic ring nitrogen atom, the heterocyclic group being attached to the  $\text{NH}_{3-x-y-z}$  group by an alkylene group containing up to 10 carbon atoms.**

The examiner has not pointed to a teaching or suggestion in Schipfer of a process that would produce a polyamine derivative meeting the foregoing limitation.

The examiner has the burden to establish that polyamine derivatives meeting the foregoing limitations are inherent in Schipfer. The examiner cannot meet this burden.

Application No. 10/687,766

1949, 1951 (Fed. Cir. 1999). "The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic." [citations omitted] MPEP 2112. "In relying upon a the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." MPEP 2112.

The examiner cannot provide the necessary basis in fact and/or technical reasoning to reasonably support a determination that polyamine derivatives made by the methods described in Schipfer would necessarily meet the foregoing limitations.

Applicant respectfully requests that claims 9-10 and 13-18 be allowed.

**-Previously cited references**

The examiner did not contend that the other references cited against claim 1 described the amine modifier of claims 1-7. The examiner cannot establish that the other cited references necessarily would produce the polyamine derivate of claim 36. Applicant also makes the following observations regarding the previously cited references with respect to amended claims 9-18 and new claims 20-35:

**-Jacobs et al. (U.S. Patent No. 4,897,435)**

The foregoing arguments also apply to U.S. Patent No. 4, 897,435 to Jacobs III, et al. which describes a process in which "hydroxyalkyl carbamate-containing amine is reacted with a water-insoluble, epoxide-containing "backbone" compound." See. Jacobs, col. 4, ll. 25-27 (emphasis added). As amended, claims 9-18 and 20-35 do not read on such a process or the product made by such a process.

**-Hönel (U.S. Patent No. 5,055,542)**

The examiner did not point to a teaching in Hönel of a process comprising:

- (b) reacting the polyamine-derived compound with one or more amine-specific reagents to form an intermediate, the amine-specific reagents having a fourth number of two or more amine-specific functional groups selected from the group consisting of isocyanate groups, anhydride groups, acid chloride groups, maleate groups, fumarate groups, citraconic ester groups, itaconic ester groups, and (meth)acrylate groups.

Application No. 10/687,766

**selected from the group consisting of isocyanate groups, anhydride groups, acid chloride groups, maleate groups, fumarate groups, citraconic ester groups, itaconic ester groups, and (meth)acrylate groups.**

Claim 20 (emphasis added).

Hönel describes a process wherein "polyamines (A) are first reacted with compounds (B) which contain at least one cyclic carbonate group (2-oxo-1,3-dioxolane group) and optionally hydroxyl groups, 1,2-epoxide groups and isocyanate groups" to form "reaction product (C)." Hönel, col. 3, ll. 39-45. In the previous office action, the examiner argued that the product (C) is "then reacted with polyisocyanate, i.e. bifunctional amine-specific reagent, to form product, i.e. polyamine derivative." Office action mailed March 24, 2006, p. 9. The examiner apparently cites portions of Hönel from col. 8, l. 35-col. 9, l. 18 in support of this position.

The cited portions of Hönel do discuss "[t]he reaction of the adduct (C) with the isocyanates (D1)(D2)." Hönel, col. 8, ll. 35-36. However, D1 are said to be "long-chain monoisocyanates." Hönel, col. 8, l. 56. D2 are described as "[p]artly masked polyisocyanates still having one free NCO group." Hönel, col. 8, l. 66-67. Hönel explains that "[t]he masking agents should be such that at the customary curing temperatures of 130° to 180° C., in the presence or absence of catalysts known for this purpose, they again split off." Hönel, col. 9, ll. 57-60.

The examiner has not established that Hönel's "long-chain monoisocyanates" or that Hönel's "[p]artly masked polyisocyanates still having one free NCO group" are isocyanate groups "having two or more amine-specific functional groups selected from the group consisting of isocyanate groups," as specified in claims 9 and claim 20 (emphasis added). With respect to claim 9, the examiner also has not provided the necessary "basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of" Hönel. MPEP 2112.

**-Engel (U.S. Patent No. 4,758,615)**

Engel describes a process prepared by "reacting polyamino compounds with polycarbonates." Engel, abstract. See also col. 5, ll. 42-49. The examiner has not established that Engel's polyamino compounds meet the limitation of "polyamines compris[ing] a second

Application No. 10/687,766

**REMARKS**

Applicant gratefully acknowledges the withdrawal of the rejections based on references other than U.S. Patent No. 4,563,515 to Schipfer et al. ("Schipfer").

Applicant has carefully considered the rejection in the previous office action and submits the following response. New claims 20-36 have been added. The new claims add no new matter, and are believed to place the application in condition for allowance.

**Rejection Under 35 U.S.C. §112**

The examiner rejected claim 19 as indefinite under 35 U.S.C. § 112, second paragraph. The foregoing amendment to claim 19 is believed to overcome the rejection.

**Rejection Under 35 U.S.C. §102**

The examiner maintained the rejection of previous claims 1-7, as well as claims 13-18 as anticipated under 35 U.S.C. § 102(b) by Schipfer. The examiner contends that col. 3, ll. 66-col. 4, l. 5-8 of Schipfer

disclose the use of amine modifier, namely, N,N-dimethylpropanediamine-1,3 which is identical to amine modifier utilized in the present invention and is noted, corresponds to presently claimed formula III when  $y=z=0$  and Y is anchoring moiety, i.e., tertiary amine comprising five carbon atoms, identical to the anchoring moiety of the present invention. In light of this disclosure, it is not clear why applicants' argue that there is no disclosure of amine modifier in Schipfer.

Final action, page 4. The examiner requested clarification. *Id.*

**-Response**

The examiner has the burden to establish a *prima facie* case of unpatentability of the pending claims on any grounds, including anticipation and obviousness. *In re Oetiker*, 24 U.S.P.Q.2d 1443 (Fed. Cir. 1992). If examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more, the applicant is entitled to grant of the patent. *In re Oetiker*, 24 U.S.P.Q.2d 1443; MPEP 2142. In order to establish a case of *prima facie* anticipation, the examiner must establish that a prior art reference discloses every limitation of

Application No. 10/687,766

The examiner has not met this burden with respect to the pending claims. Applicant respectfully requests that the claims be allowed.

**-Claims 1-7 and 36**

Claim 1 has been amended to specify that, in the structure of formula III:



Y represents an anchoring moiety selected from the group consisting of aliphatic groups having from 2 to 10 carbon atoms containing one or more tertiary amino group and heterocyclic groups containing one or more basic ring nitrogen atom, the heterocyclic group being attached to the  $NH_{3-x-y-z}$  group by an alkylene group containing up to 10 carbon atoms.

Claim 36 is directed to a polyamine derivative made using the amine modifier, which also includes the foregoing limitation.

The examiner has not pointed to a teaching or suggestion of an amine modifier having the foregoing structure in Schipfer, or elsewhere, or to a polyamine derivative made using an amine modifier having the foregoing structure.

For the foregoing reasons, the examiner has not pointed to a teaching or suggestion of every limitation of claims 1-7 or 36 in Schipfer, and has not established a case of *prima facie* anticipation of claim 1, claims depending therefrom, or claim 36 in Schipfer.

Applicant respectfully requests that claims 1-7 and 36 be allowed.

**-Claims 20-35**

New claim 20 specifies:

- (b) reacting the polyamine-derived compound with one or more amine-specific reagents to form an intermediate, the amine-specific reagents having a fourth number of two or more amine-specific functional groups selected from the group consisting of isocyanate groups, anhydride groups, acid chloride groups, maleate groups, fumarate groups, citraconic ester groups, itaconic ester groups, and (meth)acrylate groups.

Application No. 10/687,766

**citraconic ester groups, itaconic ester groups, and (meth)acrylate groups.**

Emphasis added. New claim 28 includes the following limitation: "(b) reacting the polyamine-derived compound with **one or more polyisocyanate to form an intermediate comprising two or more isocyanate functionalities.**" (Emphasis added).

The examiner has not pointed to a teaching of the foregoing limitations in Schipfer, and has not established a case of *prima facie* obviousness of pending method claims 20-35 over Schipfer.

**-Claims 9-10 and 13-18**

In the previous office action mailed March 24, 2006, the examiner admitted that "there is no specific formula given for the polyamine derivative, given that Schipfer et al. disclose process as presently claimed, it is clear that the polyamine derivative would inherently possess structure as set forth in presently claimed formula II." Office Action mailed March 24, 2006, p 7.

Claim 9 has been amended to specify that:

L is a residue of an at least bifunctional amine-specific reagent having two or more amine-specific functional groups selected from the group consisting of isocyanate groups, anhydride groups, acid chloride groups, maleate groups, fumarate groups, citraconic ester groups, itaconic ester groups, and (meth)acrylate groups.

The examiner has not pointed to a teaching or suggestion in Schipfer of a process that would produce a polyamine derivative meeting the foregoing limitation.

Claim 36 includes the following limitation:

Y represents an anchoring moiety selected from the group consisting of aliphatic groups having from 2 to 10 carbon atoms containing one or more tertiary amino group and heterocyclic groups containing one or more basic ring nitrogen atom, the heterocyclic group being attached to the  $\text{NH}_{3-x-y-z}$  group by an alkylene group containing up to 10 carbon atoms.

The examiner has not pointed to a teaching or suggestion in Schipfer of a process that would produce a polyamine derivative meeting the foregoing limitation.

The examiner has the burden to establish that polyamine derivatives meeting the foregoing limitations are inherent in Schipfer. The examiner cannot meet this burden.

Application No. 10/687,766

1949, 1951 (Fed. Cir. 1999). "The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic." [citations omitted]. MPEP 2112. "In relying upon a the theory of inherency, **the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.**" MPEP 2112.

The examiner cannot provide the necessary basis in fact and/or technical reasoning to reasonably support a determination that polyamine derivatives made by the methods described in Schipfer would necessarily meet the foregoing limitations.

Applicant respectfully requests that claims 9-10 and 13-18 be allowed.

**-Previously cited references**

The examiner did not contend that the other references cited against claim 1 described the amine modifier of claims 1-7. The examiner cannot establish that the other cited references necessarily would produce the polyamine derivate of claim 36. Applicant also makes the following observations regarding the previously cited references with respect to amended claims 9-18 and new claims 20-35:

**-Jacobs et al. (U.S. Patent No. 4,897,435)**

The foregoing arguments also apply to U.S. Patent No. 4, 897,435 to Jacobs III, et al. which describes a process in which "hydroxyalkyl carbamate-containing amine is reacted with a water-insoluble, epoxide-containing "backbone" compound." See. Jacobs, col. 4, ll. 25-27 (emphasis added). As amended, claims 9-18 and 20-35 do not read on such a process or the product made by such a process.

**-Hönel (U.S. Patent No. 5,055,542)**

The examiner did not point to a teaching in Hönel of a process comprising:

- (b) reacting the polyamine-derived compound with one or more amine-specific reagents to form an intermediate, the amine-specific reagents having a fourth number of two or more amine-specific functional groups selected from the group consisting of isocyanate groups, anhydride groups, acid chloride groups, maleate groups, fumarate groups, citraconic ester groups, itaconic ester groups, and (meth)acrylate groups.

Application No. 10/687,766

**selected from the group consisting of isocyanate groups, anhydride groups, acid chloride groups, maleate groups, fumarate groups, citraconic ester groups, itaconic ester groups, and (meth)acrylate groups.**

Claim 20 (emphasis added).

Hönel describes a process wherein "polyamines (A) are first reacted with compounds (B) which contain at least one cyclic carbonate group (2-oxo-1,3-dioxolane group) and optionally hydroxyl groups, 1,2-epoxide groups and isocyanate groups" to form "reaction product (C)." Hönel, col. 3, ll. 39-45. In the previous office action, the examiner argued that the product (C) is "then reacted with polyisocyanate, i.e. bifunctional amine-specific reagent, to form product, i.e. polyamine derivative." Office action mailed March 24, 2006, p. 9. The examiner apparently cites portions of Hönel from col. 8, l. 35-col. 9, l. 18 in support of this position.

The cited portions of Hönel do discuss "[t]he reaction of the adduct (C) with the isocyanates (D1)/(D2)." Hönel, col. 8, ll. 35-36. However, D1 are said to be "long-chain monoisocyanates." Hönel, col. 8, l. 56. D2 are described as "[p]artly masked polyisocyanates still having one free NCO group." Hönel, col. 8, l. 66-67. Hönel explains that "[t]he masking agents should be such that at the customary curing temperatures of 130° to 180° C., in the presence or absence of catalysts known for this purpose, they again split off." Hönel, col. 9, ll. 57-60.

The examiner has not established that Hönel's "long-chain monoisocyanates" or that Hönel's "[p]artly masked polyisocyanates still having one free NCO group" are isocyanate groups "having *two or more* amine-specific functional groups selected from the group consisting of isocyanate groups," as specified in claims 9 and claim 20 (emphasis added). With respect to claim 9, the examiner also has not provided the necessary "basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of" Hönel. MPEP 2112.

**-Engel (U.S. Patent No. 4,758,615)**

Engel describes a process prepared by "reacting polyamino compounds with polycarbonates." Engel, abstract. See also col. 5, ll. 42-49. The examiner has not established that Engel's polyamino compounds meet the limitation of "polyamines compris[ing] a second

Application No. 10/687,766

number of one or more  $\text{-NH}_2$  functional groups and a third number of **one or more second amine functional groups, the second amine functional groups having a lower lactone reactivity than the  $\text{-NH}_2$  functional groups.**" Claim 20 (emphasis added).

With respect to claim 9, the examiner has not provided the necessary "basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic[s] necessarily flow from the teachings of" Engel. MPEP 2112.

Applicant respectfully requests that the claims be allowed over Engel.

**-Hönig (U.S. Patent No. 5,369,190)**

The examiner also contended that Hönig described reacting "polyamine derived compound" with "diisocyanate, i.e., bifunctional amine-specific reagent, to form intermediate product." Office action mailed March 24, 2006, p. 11. However, Hönig states that it relates to a process for the production of crosslinking components for cationic paint binders having hydroxyl groups and/or primary or secondary amino groups, which is characterized in that at least 50%, preferably 60 to 100%, of the isocyanate reactive groups of hydroxyl-functional carbamate compounds are reacted with diisocyanates which are half-blocked by monohydroxy compounds and have an unblocking temperature below 180 °C.

Hönig, col. 1, ll. 48-56 (emphasis added).

The examiner has not established that Hönig's "diisocyanates which are half-blocked by monohydroxy compounds" are isocyanate groups "having *two or more* amine-specific functional groups selected from the group consisting of isocyanate groups," as specified in claims 9 and claim 20 (emphasis added). With respect to claim 9, the examiner also has not provided the necessary "basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of" Hönig. MPEP 2112.


### **Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the pending claims is earnestly solicited.

Application No. 10/687,766

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

  
Paula D. Morris

Registration No. 31,516

Paula D. Morris &amp; Associates, P.C.

d/b/a Morris &amp; Amatong, P.C.

10260 Westheimer, Suite 360

Houston, TX 77042

ATTORNEY FOR APPELLANT